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THE EFFECTS OF PRANAYAMA, HATHA AND RAJA YOGA ON PHYSICAL PAIN AND THE QUALITY OF LIFE OF WOMEN WITH MULTIPLE SCLEROSIS

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Abstract

In a clinical trial carried out on 60 women with multiple sclerosis, the researchers obtained data using survey questionnaires. In addition to demographic data, the Multiple Sclerosis Quality of Life-54 (MSQoL-54) instrument was used to determine how multiple sclerosis influences the quality of life of the studied women. Within the frame of this randomized controlled trial, the participants were divided into two equally sized groups (the case and the control group) in which the level of pain and the quality of life were evaluated. The case group exercised pain-managing Yoga methods for three months, keeping the pace of eight 90 minute - sessions per month. The control participants were subjected to no intervention. One month after the Yoga therapy, the level of pain and the quality of life were evaluated in both groups and compared to the baseline data. Data were analyzed using SPSS software and paired t-tests. After the Yoga therapy, the case group showed a significant improvement in physical pain management (P=0.007) and the quality of life (P=0.001) as compared to the control group. The results showed that Yoga techniques can alleviate physical pain and improve the quality of life of multiple sclerosis patients.

Keywords: Multiple sclerosis; Yoga; Quality of life; Pain.

Introduction

Multiple sclerosis (MS) is a chronic inflammatory and autoimmune disease with degenerative effects on the central nervous system (Polman, 2002). The disease most commonly affects the age group of 20-40 (Currie, 2001). It is also the most common cause of neurological disability among young adults (Polman, 2002), affecting 2.5 million people throughout the world (Compston and Coles, 2008). The aetiology of the disease remains unknown (Stuve and Zamvil, 2001), while its incidence among women is double as compared to men (Phillip and Rumrill, 2009). The early onset of this life-altering and unpredictable disease affects one's health in the best years of one's life and initiates a gradual debilitating process (Holland and Madonna, 2005). It threatens one's independence and the ability to participate in familial and social activities by influencing both competence and confidence levels (Morgante, 2000). Today, many drugs are being used to treat MS, including high doses of intravenous cortisone such as prednisone or interferon-beta (Chabas et al,,2004), sold, for instance, under the trade names of Avonex and Rebif. However, despite various available treatments, MS remains to be one of the most debilitating diseases affecting various aspects of person's life by reducing its quality (Kesselring, 2002).

In recent years, researchers have considered the use of complementary therapies to improve the quality of life and living conditions of MS patients. Alternative treatments have included aerobic exercises, relaxation techniques, meditation, water treatment and various other methods such as Yoga. To assess their impact and the level of acceptance, these alternative methods should be evaluated among people belonging to different communities and having various cultural and health-related beliefs. Most Iranians deeply care about tradition and the people of Kohgiloyeh and Boirahmad provinces are no exceptions. Yoga techniques were well-accepted as a traditional form of therapy and, once they were introduced to them, participants looked forward to each session. Eastern countries with ancient history have a great familiarity with, and high appreciation of traditional and alternative therapies exercised in parallel with what modern medicine has to offer.

Yoga means unity and harmony of the body and spirit; in other words, the establishment of control over a mental signal (Swami, 2003). In fact, a close relationship between the mind and the body has been long established, and Yoga aims to balance these two and affect the overall sense of health and wellbeing by increasing the consistency of mental, nervous,

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immune, and cognitive systems. Yoga helps adjusting the autonomic nervous system, increases physical stability, strengthens the body and regulates the immune system (Parshad, 2004). The diversity of the results of research done insofar on the effects of Yoga, in particular its effect on MS patients' quality of life, as well as the increased incidence of MS in women residing in Kohgiloyeh and Boyerahmad provinces of Iran, were the catalysts for conducting this research so as to investigate how Pranayama, Hatha and Raja Yoga techniques can modify physical pain and the quality of life of MS women inhabiting this region.

Materials and methods

In a clinical trial that made use of a survey questionnaire and MSQoL-54 instrument, the researchers assessed the responses to Yoga therapy exhibited by the Iranian MS women, and compared them to those of the non-intervention group members. This study was carried out in Kohgiloyeh and Boyerahmad provinces of Iran from July 2009 to May 2010. Sixty female patients diagnosed with MS were recruited into this randomised controlled trial according to the following eligibility criteria: 1) women between 18- 45, 2) with at least 2 year- MS history, and 3) the agility to exercise Yoga. Women suffering from epilepsy, cardiovascular, metabolic and psychiatric diseases, those in the acute phase of the disease, and those simultaneously included into other sorts of self-care programmes aiming to improve their quality of life, were excluded from the study. Given the higher prevalence of MS in women as compared to men, it seemed prudent to sample only women. Upon sample selection, the participants were divided into equally sized control and case group.

The sampling process occurred after the approval from the University Research Council and the Board of Ethics was obtained. Patients' names were requested from the University deputy for treatment and those who met the inclusion criteria were accepted and enrolled into the study. Participants were contacted by phone or visited at home. An invitation from the regional Yoga Association was sent to the case group and after explaining the purpose of the contact, the women were invited to attend Yoga classes.

Measurement

The level of pain and the quality of life were evaluated using MSQoL-54 standard questionnaires. The validity and reliability of the instrument for the Iranian population was determined and approved by the faculty members of Shiraz University of Medical Sciences (Borhani Haghighi and Ghaem, 2005). According to the Likert scale, the level of pain was scored from 1 to 6, where score 1 meant no pain and 6 meant severe pain. Based on this scoring system, the patients' quality of life was scored from 0 to 10, where zero indicated the worst and 10 indicated the best quality of life. A written informed consent was obtained from each participant after explaining the essential study components such as its purpose, voluntariness of participation, lack of risk of injury or harm, privacy and confidentiality issues, and the possibility to withdraw from the study with no strings attached. The case group underwent Yoga therapy for three months, keeping the pace of eight 60 to 90 minute-lasting sessions per month, while the control group was subjected to no intervention at all.

The Yoga method exercised in the case group is based on the Ashtanga Yoga having an eight-folded path founded on three principles: 1) slow-motion exercising (Hatha), 2) breathing exercises or life force absorption through Yoga breathing (Pranayama), and 3) mind focus and the establishment of control through meditation, extension and quiescence (Raja). At each Yoga session, the women started with the corpse pose (supine position) for 10 to 15 minutes. In this position, the participants simultaneously worked on their mind focus and their breathing. This procedure helps spreading attention to different parts of the body and learning how to establish mind control. With each of the four slow movements in the pronated position, the mind is focused on the intended limb to achieve a better understanding of the sensation. After each movement, breathing exercises and mind control are performed on the intended limb. Then, three slow movements are done in the sitting position and, with each movement, psychological and mental focus is placed on the intended limb. Soon after, the same four slow movements are performed in the standing position; after the movement, psychological and mental focus is put on the intended limb and the breathing control is practiced. The whole procedure takes about 40 minutes and then the patients return to the corpse pose in which they search through their mind for 10 to 15 minutes to scan for any good feeling about themselves and the world around them. At each session, the three aspects of mind control, breathing control and slow body movement were practiced. One month after the Yoga therapy, the level of pain and the quality of life of the MS women in question were re-evaluated and compared to the baseline data.

Data analysis

The collected data were analyzed using SPSS software for descriptive and paired t-test.

Results

The participants aged 31.6 ±8 on the average (range, 18 to 45). Twenty three (77%) case group members finished high school and 7 (23%) graduated from college. As for the control group, 21 (70%) members had high school education, and 9 (30%) had college education. Demographic data and Yoga effects on the level of pain level and the quality of life of the studied MS women are presented in Tables 1 and 2, respectively.

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Table1: Absolute and relative demographic figures descriptive of the studied MS women

Variable		**Case group**	**Control group**
Marital status	married	20 (67%)	**22(73%)**
	single	10 (33%)	**8(27%)**
Occupation	housewive	**18(60%)**	20 (67%)
	student	**4(13%)**	4 (13%)
	employed	**3(10%)**	4 (13%)
	freelance	2 (7%)	***0***
	unemployed	**3(10%)**	2 (7%)

Table 2: Comparison of the mean and standard deviation descriptive of the level of pain and the quality of life of MS women before and after the Yoga intervention; head –to -head comparison against the control group

Variable	Group	Before the intervention	After the intervention	Score differences
		mean± standard deviation	mean± standard deviation	
pain	Case	4.8±5.12	3.8±4.16	P=0/007
	Control	3.4±4.1	3.3±4.2	NS
quality of life	Case	4.9±1.9	7.4±2.16	P=0/001
	Control	6.9±1.5	6.8±1.9	NS

Paired t-test indicated statistically significant differences in the case group parameters prior to and post intervention, while in the control group such significant differences failed to be seen.

Discussion

According to the results of this study, practicing Yoga techniques can relatively alleviate physical pain, as demonstrated by the statistically significant differences in the case group parameters upon Yoga exercising in comparison with the baseline data and the control group. Researchers (Rafeeyanb et al, 2010) showed that aquatic activities significantly reduce physical pain in the intervention group. In several studies, pain has been reported to be the most common MS symptom, while in one of them the prevalence of pain across MS patients was found to be anywhere between 29% and 86% (O'Connor et al, 2008). Pain may be a direct manifestation of the disease or may arise due to secondary causes such as muscle contraction. In one study, the pain was attributed to some drug treatments (Kerns et al, 2002). Thus, MS patients often require pain management, and some drug treatments offered by the modern medicine may not always prove as a long-term solution. Therefore, alternative and complementary therapies such as Yoga techniques, coming at low cost, being highly effective, and lacking any risk or adverse effects when applied appropriately, seem beneficial for longevity.

Pain can affect different aspects of life such as social relationships, working life, and the overall quality of life, with psychological, physical and economic implications for an individual, family and the community involved. Since MS patients suffer pain stemming from muscle contractions, the use of Yoga techniques can help relaxing the muscles and reducing the pain. Also, Yoga helps reducing stress and induces a positive state of mind by improving psychological wellbeing. As for the quality of life issues, this study found a significant improvement among the case group members practicing Yoga techniques. Similarly, other studies have shown that 6 months of Yoga can improve cognitive function, lessen fatigue, and improve disposition and the quality of life of healthy seniors (Oken et al, 2006; Ahmadi et al, 2010).

The results of the research by Ahmadi et al (2010) on the effect of Yoga on the quality of life of MS patients, showed the mean overall QoL score registered in the case group after the intervention, to be statistically significantly improved as compared to that registered before the intervention (p=0.02). At the same time, the difference established in the control group was insignificant (Ahmadi et al, 2010).

When the quality of life of MS patients of Tehran, Iran, was compared to that of the healthy Tehran population, the researchers found all four quality-of-life domains (social relationships, physical health, mental health and environmental health) to score less in MS patients than in the healthy group (Nejat et al, 2006).

Due to degenerative and relapsing nature of MS disease, patients gradually lose their sensory and motor abilities and become dependent on others, and short of self-confidence. Dependency poses as a great stress for MS patients and exacerbates their mental and physical problems. Therefore, methods which can reduce stress experienced by MS patients and increase their physical abilities, can greatly improve their symptoms.

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Yoga exercises initiate an overall sense of wellbeing by bringing a sharper focus and mental stability, and improve nervous, immune, and cognitive systems. Yoga helps regulating autonomic nervous system, improves physical balance and strengthens and enhances many of physiological body functions (Parshad, 2004). With better overall health, other aspects of the quality of life improve as well. Other research results have shown that Yoga techniques improve the quality of sleep in MS patients (Wood, 1993). Sleep is one of the most important factors for reducing fatigue and improving the quality of life of MS patients.

Conclusion

Yoga techniques can be used as a supplementary method to treat MS patients, as it strengthens physical power and improves the mental status, which will consequently result in an improved quality of life. Nurses are health professionals that get in the closest contact with the patients and play the most significant role in their education. Yoga training methods targeted at MS patients' pain reduction are thought to improve the quality of overall and everyday life. Therefore, nurses must be informed about the available complementary and alternative methods capable of managing and controlling MS symptoms. Eligible nurses may be properly trained through Yoga training workshops so as to learn the techniques and later on teach their patients how to use Yoga for their MS management.

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